

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A magnetic memory comprising:
a spin polarization unit configured to spin-polarize electrons constituting a write current;

a hot electron generation unit configured to convert the electrons into hot electrons, the hot electron generation unit comprising an insulation film and a conductive portion, the conductive portion penetrating the insulation film in a thickness direction of the insulation film; and

a magnetic layer having a magnetization of which is reversed by the hot electrons.

2. (Original) The magnetic memory according to claim 1, wherein a response characteristic of an electric current flowing as a result of application of a voltage to the hot electron generation unit is non-linear.

3. (Original) The magnetic memory according to claim 1, wherein the hot electron generation unit includes an insulation film which enables the write current to tunnel through the insulation film in a thicknesswise direction thereof upon application of a voltage.

4. (Currently Amended) The magnetic memory according to claim 1, wherein

the hot electron generation unit includes two conductive layers ~~and an~~ sandwiching the insulation film, and formed between the two conductive layers; and the insulation film includes a conductive area contact the conductive portion of the hot electron generation unit.

5. (Currently Amended) [[The]] A magnetic memory ~~according to claim 1,~~
comprising:

a spin polarization unit configured to spin-polarize electrons constituting a write current;

a hot electron generation unit configured to convert the electrons into hot electrons; and

a magnetic layer having a magnetization which is reversed by the hot electrons,
wherein the hot electron generation unit includes a Schottky junction.

6. (Original) The magnetic memory according to claims 1, further comprising:
a magnetic layer in which a first crystal axis is aligned in a direction perpendicular to a film surface; and

a non-magnetic layer which is stacked on the magnetic layer and in which a second crystal axis is aligned in the direction perpendicular to the film surface, wherein one of a symmetry of an up-spin band and a symmetry of a down-spin band, which is achieved at an energy level higher than a Fermi energy level of electrons traveling in the direction of the first crystal axis in the magnetic layer, is not present in a band of electrons located at an energy level higher than the Fermi energy level of

electrons traveling in the direction of the second crystal axis in the non-magnetic layer.

7. (Original) The magnetic memory according to claims 1, wherein the spin polarization unit is a magnetic layer in which magnetization is fixed in substantially one direction.

8. (Currently Amended) A method of writing data into a magnetic memory, the magnetic memory including a hot electron generation unit, the hot electron generation unit including a conductive portion penetrating an insulating film in a thickness direction of the insulating film, the method comprising:

spin-polarizing electrons constituting a write current;

converting the electrons into hot electrons by causing the write current to flow through the conductive portion; and

reversing magnetization of a magnetic layer by the hot electrons.

9. (Original) A magnetic memory comprising:

a first electrode;

a first magnetic layer formed above the first electrode;

a first non-magnetic layer formed on the first magnetic layer;

a second magnetic layer formed on the first non-magnetic layer;

a first insulation film formed on the second magnetic layer;

a first layer formed on the first insulation film;

a second non-magnetic layer formed on the first layer; and

a second electrode formed on the second non-magnetic layer.

10. (Original) The magnetic memory according to claim 9, wherein the first layer is a non-magnetic layer.

11. (Original) The magnetic memory according to claim 9, further comprising:
a second insulation film formed between the first electrode and the first magnetic layer, wherein the first layer is a non-magnetic layer.

12. (Original) The magnetic memory according to claim 9, further comprising:
a second insulation film formed between the first electrode and the first magnetic layer, wherein the first layer is a magnetic layer.

13. (Original) The magnetic memory according to claim 9, further comprising:
a second insulation film formed between the first electrode and the first magnetic layer, wherein:

the first layer is a magnetic layer; and

the first non-magnetic layer is a third electrode.